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1. Abstract Title: Atmospheric Infrared Sounder on the Earth Observing System
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7. Abstract:

The Atmospheric Infrared Sounder (AIRS) is a high spectral resolution **IR** spectrometer that, together with the Advanced Microwave Sounding Unit (**AMSU**) and the Microwave Humidity Sounder (**MHS**), is designed to meet the operational weather prediction requirements of the National Oceanic and Atmospheric Administration (NOAA) and the global change research objectives of the National Aeronautics and Space Administration (NASA). The three instruments will be launched in the year 2000 on the **EOS-PM** spacecraft.

The AIRS spectrometer covers the 3.7-15.4 **micron** region of the spectrum with spectral resolution of 1200. The **AIRS** design, utilizing fifteen linear **HgCdTe** detector arrays cooled to a temperature of 55K, has been made possible by recent breakthroughs in detector array and cooler technology. **Testing** of the AIRS engineering model **will** start in 1996.

The AIRS, together with the AMSU and MHS are designed to retrieve vertical temperature and moisture profiles under all-weather day, night and cloudy conditions. The required temperature retrieval accuracy is **1K** rms with **1km** thick layers in the troposphere and water column retrieval accuracy of 10%. Algorithms, using simulated radiances from a **mesoscale** circulation model including up to 90% cloudy conditions, have been prototype, which meet the required retrieval accuracy.

8. Brief Biography: **Hartmut** H. Aumann received a **PhD** degree in Space Science from Rice University, Houston, Texas. He has been associated with the Jet Propulsion Laboratory, Pasadena, California since 1970, where he has worked in **IR** astronomy and **IR remote** sensing of the Earth using air-borne and satellite born instruments. He is a member of the AIRS science team and AIRS Project **Scientist**.